

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

YAN, *et al.*

Appl. No.: 10/032,495

Filed: January 2, 2002

For: A Method For Producing A Population Of  
Homozygous Stem Cells Having A Pre-Selected  
Immunotype And/Or Genotype, Cells Suitable For  
Transplant Derived Therefrom, And Materials And  
Methods Using Same

Atty. Docket No.:

967039.00002

Examiner: Li, Qian Janice

Group Art Unit: 1632

**REMARKS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The following remarks are herewith submitted with the Request for Continued Examination to supplement the Amendment/Reply under 37 C.F.R. §1.116 previously filed on December 20, 2004.

***Support for Claims***

In support of the previously asserted arguments that the claims, as amended, to human homozygous pluripotent stem cells are obtainable by the claimed method (from human parthenogenetic embryonic inner cell mass) such that a practical utility is well established and enabled such that one of ordinary skill in the art would know how to use the claimed invention

without undue experimentation, the following information regarding naturally occurring teratomas is submitted.

Teratomas are benign tumors that are composed of a variety of tissue elements reminiscent of normal derivatives from any of the three germ layers. Naturally found teratomas are derived from diploid totipotent cells, typically non-fertilized germ cells, having the capacity to differentiate into elements representative of any of the three germ layers –ectoderm, mesoderm, and endoderm. Naturally occurring spontaneous teratomas are diploid and occasionally polyploid. *See* Surti, et al., *Am. J. Hum. Gene.*, 47:635-643 (1990). It is believed that diploid teratomous tissue occur secondary to meiosis I, or due to fusion of the second polar body with the ovum. Eppig and Eicher, *Genetics*, 103:797-812 (1983); Eppig and Eicher, *J. Hered.*, 79:425-429 (1988). Further, teratomas have been proven to be genetically homozygous in heterozygous hosts. Linder, *Proc. Natl. Acad. Sci. USA*, 63:699-702 (1969); Linder and Power, *Ann. Hum. Genet.*, 34:21-30 (1970); Linder, et al., *Nature*, 254:587-598 (1975); Kaiser-McCaw, et al., *Cytogenet. Cell. Genet.*, 16:391-395 (1975). Subsequent studies, however, failed to consistently replicate such results. Surti, et al., *Am. J. Hum. Gene.*, 47:635-643 (1990); Carrit, et al., *Proc. Natl. Acad. Sci. USA*, 79:7400-7404 (1982); Parrington, et al., *J. Med. Genet.* 21:1-12 (1984); Deka, et al., *Am. J. Hum. Genet.*, 47:644-655 (1990); and Dahl, et al., *Cancer Genet. Cytogenet.*, 46:115-123 (1990).

Compared to other tumors, teratomas exhibit unique histological features. They are composed of various differentiated tissues, including tissues such as epidermis, central nervous system tissue, or mature cartilage. They also contain nonspecific tissue types, e.g., lymphoid tissue or fibrous stroma. The present invention relates to teratoma-like cells. The Applicants have successfully developed a way to mimic the naturally occurring steps in teratomas to

produce stems cells that are homozygous for unique MHC haplotypes and that are histocompatible with any individual carrying the components of such haplotypes for the purpose of having a constant, reliable, comprehensive supply of cells for study, diagnosis, transplant, and/or treatment.

***Examiner Interview***

Applicants herewith submit a Request for Examiner Interview. Applicants would like to request an Examiner Interview to discuss the application and pending claims.

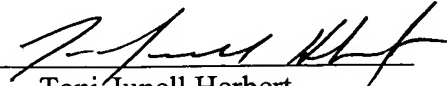
**CONCLUSION**

Based upon the previously filed amendment/reply under 37 C.F.R. §1.116 filed on December 20, 2004 and the remarks herewith submitted, Applicants submit that all of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant(s) therefore respectfully request(s) that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn.

Respectfully submitted,

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Date: 3/2/05

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